

REMARKS

Claims 1-22 are pending in the subject application. Claims 1-22 stand rejected. Claims 5 and 6 have been amended.

REJECTIONS

35 U.S.C. § 112

Claim 5 stands rejected under 35 U.S.C. § 112 as being indefinite. Applicant respectfully traverses this rejection for the reasons set forth herein.

The Examiner alleges that it is unclear what properties fall within the scope of this claim, i.e., what physical and/or mechanical properties would have to be different, and what degree of difference is required, in a second dispersed phase in order for a material to meet the limitations of this claim. As amended, claim 5 lists the properties that would have to be different to meet the limitations of the claim: hardness, Palmquist Toughness, and wear resistance. A difference in any of these properties would be understood by anyone of ordinary skill in the art to be any measurable difference outside of the margin of error of the measuring instrument used to measure the property.

The amendment to claim 5 finds support, for example, in paragraphs 12 and 41, in Table 1, and elsewhere throughout the specification. No new matter has been introduced by way of amendment to the claims. Accordingly, and in view of the amendments and arguments provided herein, withdrawal of the rejection of claim 5 under 35 U.S.C. § 112 is respectfully requested.

35 U.S.C. § 102(b)

Claims 1-3, 6, 7, 11-13, 15-17, and 20-22 stand rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,743,515 issued to Fischer et al. (Fischer). Applicant respectfully traverses this rejection for the reasons set forth herein.

For a reference to anticipate a claim under 35 U.S.C. § 102(b), it must disclose, either expressly or inherently, each and every element of the claim. MPEP §2131. Claim 1 of the application at issue describes a hybrid cemented carbide comprising a cemented carbide dispersed phase, and a cemented carbide continuous phase. The contiguity ratio of the dispersed

phase in claim 1 is less than or equal to 0.48. Fischer describes a cemented carbide body with a core comprising a single binder phase, with dispersed tungsten-carbide (WC) and eta-phase. As stated in Fischer, eta-phase is an M_6 -carbide, W_3Co_3C , a single compound. *See* Fischer col. 1, lines 14-17 and 40-52. Fischer clearly states that the eta-phase, a carbide, is “uniformly distributed in the matrix of the normal WC-Co structure in the centre of the cemented carbide body.” *See* Fischer col. 2, lines 37-40, and Figure 3. By definition, a cemented carbide comprises two distinct components, and thus, eta-phase is not a cemented carbide, such as, for example, WC in a cobalt (Co) binder. Eta-phase is a single component, merely a carbide containing compound. Since eta-phase is not a cemented carbide, it can not be a cemented carbide dispersed phase. Therefore, the cemented carbide body of Fischer may be thought of as a single cemented carbide with a single binder phase, and two carbides dispersed therein, WC and eta-phase. Conversely, in the application at issue, there are two *cemented* carbides. Claim 1 describes a cemented carbide dispersed phase, itself with 2 components (a dispersed phase and a binder phase), dispersed within another cemented carbide continuous phase, itself with 2 components (a dispersed phase and a binder phase). The cemented carbide dispersed phase is a composite of a metal carbide hard phase dispersed throughout a continuous cemented carbide binder phase. Therefore, Fischer does not teach each and every element of claim 1.

Accordingly, in view of the amendments and arguments provided herein, withdrawal of the rejection of claims 1-22 under 35 U.S. C. § 102(b) based upon Fischer is respectfully requested.

35 U.S.C. §103(a)

Claims 4, 5, 8-10, 14, 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Fischer. Applicant traverses this rejection for the reasons set forth herein.

To establish a *prima facie* case of obviousness, three basic criteria must be met. MPEP § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Id.* Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The teaching or suggestion to make the claimed combination and the

reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. *Id.*

It is respectfully submitted that the rejections to claims 4, 5, 8-10, 14, 18 and 19 do not meet the *prima facie* case for obviousness for at least the reasons that Fischer does not teach or suggest all the claim limitations, and there is no suggestion or motivation in Fischer to modify its teachings to arrive at the invention claimed in claims 4, 5, 8-10, 14, 18 and 19.

As discussed herein, the eta-phase in Fischer is not a cemented carbide dispersed phase. Fischer discloses a single cemented carbide containing two kinds of carbide particles. The application at issue discloses a hybrid cemented carbide; one cemented carbide comprising a dispersed phase and a binder phase dispersed in a second cemented carbide comprising a dispersed phase and a binder phase. Claims 4, 5, 8-10, 14, 18 and 19 describe a hybrid cemented carbide. Thus, Fischer does not teach or suggest all of the claim limitations, and the *prima facie* case of obviousness has not been met.

There is no suggestion or motivation in Fischer to modify its teachings to make a hybrid cemented carbide. Fischer discloses a single cemented carbide that forms eta-phase under given sintering conditions. This method could not be used to produce the hybrid cemented carbide of the application at issue. Eta-phase is a single carbide composition, and not a cemented carbide. The final core of Fischer comprises WC and eta-phase, both single compounds, dispersed in a binder. The application at issue describes forming and pre-sintering a cemented carbide, and then mixing particles of that pre-sintered cemented carbide with another cemented carbide. After a second sintering, the invention comprises a cemented carbide dispersed phase within a cemented carbide continuous phase. There is no suggestion or motivation in Fischer to add a second cemented carbide phase to the body, nor do the sintering conditions in Fischer cause a cemented carbide to become itself dispersed within a second cemented carbide. Thus, there is no suggestion or motivation in Fischer to modify its teachings to make a hybrid cemented carbide, and the *prima facie* case for obviousness has not been met.

Accordingly, for at least the reasons provided herein, withdrawal of the rejections and allowance of claims 4, 5, 8-10, 14, 18 and 19 based upon the teachings of Fischer is respectfully requested.

Nonstatutory Obviousness-Type Double Patenting

Applicant respectfully traverses this rejection.

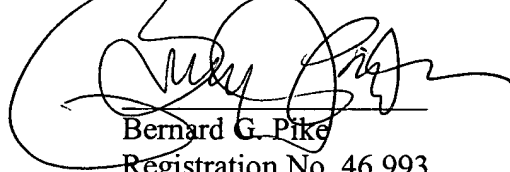
CONCLUSION

Applicant respectfully submits that the claims of the present application, as amended, are directed to subject matter that is patentable over the cited references. Applicant respectfully requests issuance of a Notice of Allowance at an early date. If, however, the Examiner is of the opinion that the instant application is in condition for disposition other than allowance, Applicant respectfully requests that the Examiner contact Applicant's attorney at the telephone number listed below so that those concerns may be addressed.

2-16-2007

Date

Respectfully submitted,



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